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Diderot's body and cognitive science: sensation, impulse and action in performer training

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Abstract

This essay places Diderot's materialist philosophy articulated in Paradox of the Actor in the late nineteenth century, alongside emerging thinking from neurobiology. Taking Diderot's pursuit for the recognition acting as an art as a point of departure, it reflects on the labour of the actor as awareness within multiple cognitions: impulse, sensation and action. The discussion maps various examples including Stanislavsky in the early 1900s through to contemporary more regulated techniques like Susana Bloch's Alba Emoting method and Phillip Zarrilli's psychophysical approach. It considers the language of neuroscience in explicating the nuances of technique in acting and proposes that good acting requires a mastery of self at a neural level.

Diderot's body and cognitive science: sensation, impulse and action in performer training

This essay considers the language of neuroscience in explicating the nuances of technique in acting. It proposes that good acting is premised on mastery of what we have come to understand as neural patterns (Lutterbie, 2011) within a general approach to the self-study of how neural patterns alter and how this intersects with the integral relationship between what Shaun Gallagher calls our body schema with our body image. The subtitle of the paper 'sensation, impulse and action in performer training' appears to suggest a sequential relationship between these states. We hope to unpack these concepts and in so doing we make reference to the history of actor training while pointing to conceptual shifts that underpin contemporary approaches. Significant in this paper is our exploration of impulse, sensation and action as (perceived) cognition.

Diderot's paradox: *Who does the feeling?*

Denis Diderot is 'one of the earlier major Western theorists to tackle the question of the actor's emotional involvement in acting' (Daniel Meyer-Dinkgrafe, 56).[1] Diderot's infamous essay, written between 1770 and 1778, though not published until 1830, *Paradox of the Actor*, has had a convoluted history. The tract takes the form of a dialogue between two actors and seeks to express what was the apotheosis of late eighteenth century European writing on an emerging conundrum in acting. Diderot penned the essay in response to a series of pamphlets on the importance of feeling in performance with the intention of establishing a philosophical dialogue that at the same time, asserts the view that the most effective actor – that is, the actor who has the greatest effect on an audience – is one who is able to demonstrate mastery over his feelings so as to imitate emotion. Implicit in Diderot's now familiar proposition is the belief that the actor need not experience the emotions of his

character in order to elicit feelings in the audience, and that he is a better actor for not doing so.

In simplistic terms, the *Paradox* was a call for discipline and technique in acting. Diderot believed that reason played a considerable part in this. As the first actor says to the second:

FIRST: I want him to have a lot of judgment, for me there needs to be a cool, calm spectator inside this man, so I demand sagacity and no feeling, the power to imitate anything. Or, what amounts to the same thing, an equal aptitude for all characters and parts.

SECOND: No feeling!

FIRST: None . . . If the actor actually felt what he was doing, would it honestly be possible for him to play a part twice running with the same warmth and the same success? He would be full of warmth for the first performance and exhausted and cold as a stone for the third . . . If he's himself when he acts, how will he stop being himself? If he wants to stop being himself, how will he know where the right point is to fix his performance? (Diderot, 1994, 103-4).

For an actor to privilege 'reason', in Diderot's mind, was to begin to 'know' and to be able to reproduce the 'right point' in performance. With this insight, Diderot mounted an all-out attack on the approach he identified as *sensibility* in the actor, demanding instead a calculated approach to manifesting the role. He tried painstakingly to explain that in order to convincingly display emotion and maintain a detached demeanor, the actor must create an what Diderot termed, an 'ideal model' from their imagination and their memory. By way of

illustrating he proffered his idealised example: his contemporary, the actor Hippolyte Clairon. In Diderot's mind, Hippolyte Clairon achieved her excellence due to her expertise in negation of self. She seems to follow a model in which 'she is double'. Diderot observes what he names her acute performance awareness, and argues that it is this that is necessary for an affecting performance. Through describing Clairon's labour and articulating his observations, he fashions the model of the actor he presents in the *Paradox*, as one who is performing as though fully engaged and at the same time, watching the performance without empathizing fully with her emotions and without being completely detached from them either. He termed this state of split awareness, *dédoublement*,[2] and was adamant that such skill should underpin an actor's performance. Thus central to Diderot's *Paradox* is his insistence on a technical approach to the *art* of acting, and indeed for the establishment of a technique of acting that interacted with imagination and memory. In mastering this, the actor would move away from what Diderot called 'the unevenness [of playing] from the heart' and move toward consistency in performance. Roach's (1985) *The Player's Passion* states that Diderot's theorizing is contingent on the science and philosophy of the period. In this essay, we take Diderot's efforts as a starting point to think through the ways in which contemporary acting, actor technique and actor training are influenced by contemporary understandings in philosophy and science. Of course what follows Diderot's determination has been profound and continued resonances across generations of actors. Emerging from the search for consistency in performance is the ethos that an absences of technique jeopardizes the outcome, risking performances that are inconsistent and unpredictable (Lutterbie 2011).

A key figure in this investigating this is Stanislavsky, who in turn, directly influenced Meyerhold, Strasberg and Brecht" (Meyer-Dinkgrafe 2005 55-56). In his autobiography, *My*

Life in Art,[3] Stanislavsky (1957), whose ideas form the basis of most acting techniques in the Western world, states that in 1906 he was facing a crisis related to his own process of acting. Retreating to Finland that year, he takes with him some of the classic texts on acting, including *The Paradox of the Actor*. Whilst he respected the understanding of the actor's experience shown in the *Paradox*, Stanislavsky found the concept of the actor's duality and in particular the idea of a partially detached performer problematic in relation to his own ideal of an actor fully engaged – in body and mind. From this insight, Stanislavsky committed to experiencing emotion as a premise for artistic practice. In his attempts to partner impulse and feeling with a controlled performance he conceived of the actor's creative process in two ways. These he called: 'the inner work of the actor on himself and the inner and the outer work of the actor on his part.' (Stanislavksy,1950, p.27) He goes on to explain that:

The inner work of the actor on himself is based on a psychic technique which enables him to evoke a creative state of mind during which inspiration descends on him more easily.

The actor's external work on himself consists of the preparation of his bodily mechanism for the embodiment of his part and the exact presentation of its inner life. (Stanislavksy

1950, 27).

This is evident in the application of what became known as Stanislavsky's system, whereby the actor attempts to experience her own feelings and to regulate her own performance at the same time. The actor is tasked with holding this tension as part of their lived experience onstage. Attempting this is one thing, but experiencing this as a conceptual

unity is extremely difficult for the actor if constrained by the language of the internal/external or inside/outside models. Here lies the *aporia* for the actor in Stanislavsky's method, where impulse and feeling are sought, but at the same time held in check.

The Stanislavsky approach captured a material and philosophical experience. Developing this thinking early in the twentieth century, the science and philosophy of the period provided explanations for Stanislavksy's experiencing. In the 1930s he was influenced by experimental psychologists Théodule Ribot and Carl Lange with his writings capturing the view that mind and emotion are not separate but grow out of the body. Ribot's work on affective memory in particular supported Stanislavsky's view that an act of creative will could be partnered with the use of affective memory, that is, the memory of a situation could be connected to a desired feeling state. This then informed the development of what Stanislavsky called 'the method of active analysis', in which improvisations are used to connect actors to physical aspects of scenes. This offered him evidence that external action can induce an internal state and that physical imitation can lead feeling, as Diderot claimed. This led the ethos that 'the character of a person *is* his system of movements' (Gorchakov , 1927), an approach to working somatically, through the body towards emotion, and what enabled the actor to resolve a number of problems; but Stanislavsky didn't know why or how this was.[4] Toward the end of the century the ideas and influence of Stanislavsky were reconsidered. Citing Robert Gordon, contemporary performer-training specialist and academic, Phillip Zarrilli (2009) names *Michael Chekhov, Copeau, Craig, Saint-Denis, Brook, Boal, Spolin, Artaud, Grotowski, Barba* as practitioners who have articulated and in some cases dedicatedly codified processes that underlie their experience and understanding of the phenomenon of acting. Each tradition seeks to name and distribute a technical schema for

actor training. These traditions are mostly premised on systematized approaches that emerge from a founders' personal experience. Despite the differences in discourse, focus, and perspective, each approach tends toward establishing the conditions in which the novice actor might accomplish Diderot's notion of *acute awareness*. Blair (2008) states this is the expressive actor; an actor who demonstrates virtuosity in the consistent use and integration of 'intellect, feeling, voice, and movement' (2). Intrinsic to each conceptualization is the idea of the actor's humanity and materiality and the insistence on the need for (self) mastery. Joseph Roach (1985, 11) specifies that it is the human body that is central, *the actor's body* – the actor's "instrument". He states, 'the nature of the body, its structure, its inner and outer dynamics, and its relationship to the larger world that it inhabits' have been constants in debate about acting since antiquity. Twenty-first century discussion incorporates emergent understandings of perception, neural plasticity and (actor's) body schema into the vocabulary to describe acting and acting technique. New approaches by innovative theatre practitioners such as Phillip Zarilli and Susannah Bloch are good examples of this.

Moving on from his *Acting (Re) considered* (2002) thesis that constructs the actor's performance as 'implicitly enact[ing] a "theory" of acting', in *Psychophysical Acting,* Phillip Zarrilli deconstructs his experiences through engagement with phenomenology and perception studies (Zarrilli 2009, 3). He proposes that acting is 'the embodiment and shaping of energy' (p42). Central to his thesis of 'performance as psychophysical process', Zarrilli promotes an enactive view of acting premised on the work of Merleau-Ponty where acting is 'a process of "I can"' (Zarrilli 2009, 46). *Acting as the organization of energy* and *the actor's subjective agency to enact* are useful metaphors for the actor. However the way in which this is translated to technique requires the actor to engage with Zarilli's (2009) bespoke

(intercultural) training approach that draws on yoga, kalarippayattu, and taiqiquan; methods, he claims, equip the actor with the skills to 'stay focused while deploying one's energy and awareness to the specific work she has to do in each moment of performance' (Zarilli 2012, 123). Like Stanislavsky et al. before him, the Zarilli technique seeks to nurture mastery in the actor. Lutterbie (2011) suggests that mastery relies on so many different areas, 'from the gross motor controls of the cerebellum and brain stem, which interacts directly with the spinal cord, to the cerebrum (particularly motor cortex, supplementary motor area, premotor area, the somatosensory cortex, and locations in the various associative cortices) … [to] fine motor control of "willful movement" incorporating memories' (136). Susana Bloch places her conception of mastery within an explication of emotion and feeling.

Chilean neuroscientist Susana Bloch's *Alba Emoting* method has had some attention in North America in the past two decades due to its efficacy as a kind of 'somatic education' (Beck 2010, 147). Diderot's ideas reappear in Bloch's research into the connections among physiological, expressive, and subjective components of emotions in the actor. Of interest to Bloch is Diderot's *Paradox* itself - that the actor should not feel an emotion, but imitate the external signs of such emotion in order to affect the audience; and the problem of the actor in attempting a consistent performance based on imitating emotion. Building on the work of psychologist Paul Ekman, Bloch's experiments have established that 'specific emotional feelings were linked to specific patterns of breathing, facial expression, degree of muscular tension, and postural attitudes' (Bloch 1993, 124). According to Bloch, as most research into emotional reactions ignore 'the subjective, intimate experience we call 'feeling', an opposite approach is proposed, a holistic approach that 'define[s] emotions as *distinct and dynamic functional states of the entire organism, comprising particular groups of*

effector systems (visceral, endocrine, muscular) and particular corresponding subjective states (feelings).' (Bloch 1993, 123) Echoing Diderot's emphasis on the materiality of the actor's imitation, Bloch's *Alba Emoting* technique is structured to facilitate emotional states in the actor by replicating the 'unique interdependence between a specific breathing rhythm, a particular expressive attitude . . .and a given subjective experience', or what Bloch and her team called 'emotional effector pattern.' (Bloch 1993, 124) The voluntary reproduction of the effector pattern in the actor, is 'sufficient to activate, partially or totally, the corresponding emotional network.' In this way, Bloch posits that it is possible to teach actors the prototypical patterns so as to induce emotional states via controlled physical actions. (Bloch 1993, 128).

Unique to Bloch's technical schema is its emergence from the neuroscience community. Indeed, Bloch and her collaborators Guy Santibañez and Pedro Orthous organized their findings into a 'tool to support actors to effectively induce physiological changes that occur within an emotion.' (Beck 2012, 143) Evidence was gathered through researching the actors' processes following which Bloch et al codified and systematized the way in which the actor might successfully combine 'breath, facial expression and postural attitude' to produce a desired emotional state. Essentially naming the physiological keys that help to induce the specific emotional effector patterns.[5] Bloch's research has placed the investigation of the relationship between breathing and emotion 'in the context of western science' resulting in a contemporary scientifically justified articulation of the phenomenon that 'many performers have been intuitively embodying for centuries'. (Beck 2012, 142).

Languages of Bloch and Zarilli bring a new perspective to concepts embedded in Diderot's (imagination and memory) and Stanislavks's (experience, impulse and feeling)

writing. The contribution of cognitive neuroscience to the way we talk about actor and performer training has made more complex our understanding of actor experience. In some respects this shifts the practice beyond beyond the narrow confines of self-referential entanglement and subjective terminology of the twentieth century. As indicated in technical explication by Zarilli and Bloch, advances in cognitive neuroscience provide a way to discuss the simultaneity of actor states (sensation, feeling, impulse and action) as physiological experience. North America theatre academic Rhonda Blair states:

Body and consciousness – or body, mind, and feelings – is a singular thing: everything that comprises consciousness derives from our physical being. A basic truth about what it means to be human is that there is no consciousness without a body. This is also a basic truth for acting: the body and the consciousness that rises out of it are the core materials of the actor's work. (Blair 2008, 2-3).

Within Blair's claim, sensation is always present and perceivable. This position offers support for the role of actor training as a means to develop *acute awareness*, Clairon's *dedoublement*, and to address the level of giving (or not) of attention to what the actor senses and perceives at any given moment and how this is mediated as (consistency of) action within performance. One possible explanation of how this works under the surface is Gallagher's (2005) thesis on the initiation of movement and cognitive agency.

In *How the Body Shapes the Mind*, North American philosopher Shaun Gallagher (2005) proposes an iterative model in which to consider sensation and action. In this model, the dynamics of the sense of agency (a sense of being the initiator or source of a movement) are juxtaposed with the sense of ownership of motor action (the sense that it is I who am experiencing the movement or thought) (176). Gallagher, known for his thinking on embodied cognition, perception and agency explains:

Pre-action neuronal processes, which serve part of the automatic body schematic control, anticipate the actual motor performance and provide an online sense of agency that compliments the ecological sense of self-movement. In one's immediate phenomenology during action, agency is not represented as separate from action, but is an intrinsic property of action itself, experienced as perspectival source.

Experimental research on normal subjects supports the idea that such agentive awareness of action is based on motor processes that precede action and that translate intention into movement, rather than on actual feedback from movement or from peripheral effort associated with such movement. The content of the experience of voluntary action then, includes a sense of agency for the action, generated in processes that lie between intention and performance. (Gallagher 2005, 176)

Applying this to the actor, Gallagher's theorizing suggests a notion of impulse as precognition. Yet he does not separate the precognitive (impulse) action, from the action itself. Italian theatre studies scholar Gabriele Sofia (2013) takes this one step further in his assertion that action denotes cognition. He draws on Francisco Varela et al to state '[o]ur motor system shapes not only our actions but also our perceptions and therefore our cognition. That is what we call embodied cognition' (p.174). Gallagher's model thus, illustrates the way in which this then cycles back on itself. He points to '*body movement*, transformed onto the level of action' as central to 'shaping perception [and …] judgment …' (Gallagher 2005, p.9-10). This position enables critique of the assumptions of ordered responses: a sensation precedes a feeling; impulse into action, aligning to Diderot's potential for *split awareness.* Multiples of conscious and unconscious *awareness*es underpin Zarrilli's

thesis of *en*activity. Where in Bloch's method she targets six basic emotions, in which the aim is to build a self-*awareness* in the actor who develops strategies (technique) to monitor and manage the physiology-state for each. The interdisciplinary technical structure in both Zarilli's and Bloch's work is critical to opening the space for the actor to notice. It is within the interdisciplinary context, Gabriele Sofia (2013) acknowledges, that the practices central to acting and performing are similarly helping neuroscience articulate cognition. Sofia (2013) argues that the emergent scientific understanding of neurological function arising from practicing techniques of actor training result in 'remarkable neuromotor alterations' when linked to the materiality of context (180). Working alongside neuroscientists and applying mechanisms of acting training to the rehabilitation programmes of patients with Parkinson's disease, Sofia's expertise in actor training is central to aiding in the research on brain responsiveness for individuals with the disease. He claims:

[U]nlike other motor activities, theatre practice involves all the individual's levels of organisation, from the strictly biomechanical to the emotional and affective. In all likelihood, the great holistic aspect of such practice stimulates brain plasticity in a more complete way, accelerating mechanisms of recovery and creation of alternative cognitive strategies (Sofia 2013, 180).

Bloch's physiological monitoring strategies, Zarrilli's 'I can', and Sofia's notion of *alternative cognitive strategies* signal that actor training delivers active or dynamic states in the actor. That is, training to enable the actor to come to know their body and to better understand technique as mastery over our body.

Metaphor, Actor training and Neurobiology

Neurobiology and cognitive sciences offer expansive metaphors through which to

consider the internal/external residue in actor training.[6] As shown in the discussion so far, through neurobiology we can paint a picture of experience as composed of simultaneous cognitive processes and how these simultaneous cognitive processes equal *components* of experience (Lutterbie, 2006). Lutterbie (2006) references the work of Lakoff & Johnson to acknowledge the way in which actors rely on conceptual metaphors to evoke their experiences. A popular and repeated motif, he notes, is the idea of the 'self "emptied" of thought and judgment (and thereby allowing the free flow of feelings)'. In this understanding of the self as a container, the materiality of the 'container-self' aids in sustaining 'the supposed spilt between intellect and emotion' (cited in Lutterbie 2006, 160). Premised on actors' own experiences, his thesis argues that such metaphors, which are embedded within the actors' understandings, imply that the actor believes she has conscious control over the modes of mental processing; when in fact [– as Antonio Damasio's (1999) research suggests –] such control is very likely impossible. Instead, what seems to govern the actor's creative processes, which is an intensified form of a general cognitive capacity, are instances of what Lutterbie calls 'lateralization across zones of convergence' (2006 160), also known as synesthesia. Lutterbie cites studies by Ramachandran & Hubbard on cross-modality cognition in which concentrated neural activity reaches across the senses, allowing humans to create and recall unexpected associations: for instance, the ability to experience tactility in terms of vision ('seeing' the texture of velvet cloth) or abstraction in terms of concrete sense (visualizing numbers as colors). Taken together, the work of Damasio, Lakoff & Johnson, and Ramachandran & Hubbard point to a convergence of evidence that according to Lutterbie establishes 'the centrality of associative cognition [within] an understanding of the acting process' (2006, 161).

Returning to the simple terms of Diderot's intention – discipline and technique in

'acting' – it is useful to unpick the proposition that the actor who has control over his feelings will have the greatest effect on an audience. As the paper has argued to date, this central proposition has given impetus to actor training methods that strive to address aspects of self-control and self-regulation, where the actor need *not* experience the same emotions as his character in order to elicit similar feelings in the audience. In his analysis, Roach (1985) states that Diderot 'approach[es] the actor's body as a physical instrument like a piano or clock' (13), and thus establishes the dialogue about actor virtuosity and training as the development of habitual technique in a similar way to musicianship. This innate understanding of embodied cognition is significant in the way it drives acting research through practice where our discussions of training are embedded within our discussions of rehearsal. Contemporary acting training displays an emerging awareness of acting as a *practice*. The iterative processes of acting and the construction of acting as a practice offers useful ways forward in the discussion. We do this by taking the lead from Diderot (1994 [1830]), again through his 'First Person' admission:

If the actor actually felt what he was doing, would it honestly be possible for him to play a part twice running with the same warmth and the same success? He would be full of warmth for the first performance and exhausted and cold as a stone for the third . . . If he's himself when he acts, how will he stop being himself? If he wants to stop being himself, how will he know where the right point is to fix his performance? (103-104).

Diderot articulates the idea that emotion is separate from physical activity. It is from this conundrum that the question of whether an actor has to be moved in order to move the audience originated and set up the conditions within which to define two possible pathways to emotion for the actor – sensibility (the capacity to feel genuine emotion) and technique (the conscious control of the musculature of expression). The notion of a junction of

conscious and unconscious awareness in cognitive process gives a useful starting point for discussing feeling and emotion. According to neurobiologist Antonio Damasio (1999) feelings are the cognitive interpretation of emotion. Teasing out some of the threads from Damasio's research enables a shift in the discussion of emotion away from the psychological preoccupation of most twentieth century theories of acting toward the neural and endocrinal processes that stimulate the physiological symptoms that we interpret as emotion. Damasio's thesis emphasizes the materiality of an emotion; something that is automatic and constant, riding on the fluid waves of the body's biochemical intelligence. In her essay, *Image and Action: Cognitive neuroscience science and actor training*, Rhonda Blair points out that in Damasio's terminology,

> emotions are basically biological responses, while feelings are conscious mental formulations of the former. Both emotion and feelings are connected to the struggle for homeostasis, in that their first function is to help us detect threats or benefits thereby negotiating our environments effectively' (Blair 2006, 176)

The actor' s labour is to generate and/or reveal these material states and in doing so, to master emotion; that complex set of processes that reveal a change in the body state. In training the actor to develop awareness of the multiple modes of attention they might apply to their perceptions acts to free them to work with *states of being* rather that demonstrating, representing, and telling.

The work of Phillip Zarrilli has been investigating such ideas through practical intercultural collaborations that explore energy and presence as key phenomenological constraints. I refer particularly to the 2010 work – *Told by the Wind*[7] and the 2012 work entitled, *The Echo Chamber.*[8]

Guardian reviewer Elisabeth Mahoney says of *Told by the Wind*:

Stripped of most elements we associate with drama, this intense meditation in movement revels in stillness. It's so still at times, you worry that scratching your head or crossing your legs will be audible to all (cited in Zarrilli 2012, 149).

Influenced by Japanese theatre of quietude, the work, Mahoney states, has 'haunting, painterly beauty'. Eventually 'those nagging questions subside and a calmer understanding emerges. It's all very hypnotic … a challenging production … oddly affecting and – quietly cleansing.' (in Zarrilli 2012, 120). I (Rea) experienced a similar journey and found myself preoccupied by the infinitesimal gestural shifts by performers, particularly in the way they related to objects making *felt*, the energetic exchange.

When watching *The Echo Chamber* some two years later in 2012,[9] I encountered a similar kind of sensibility toward states and sensations. This time the work bore no resemblance to a meditation. Rather, it was mMore akin to a performed philosophical essay charting various conceptual areas: matter, cosmology, quantum physics and truth in which we were bombarded with texts in a collage of movement, spoken word, and design. When the performance started, I had found a very useful doorway through what I had selected from the program notes; that somehow the work was inspired by the notion that the human body is made of matter of which 99.9% is accounted for; and the question: what might that other 0.01% be? At least this was the kind of idea with which I sat in the auditorium.

Sitting in the dark room I was aware of a range of tensions that at times distracted me. What is presented is dense and the degree to which one can cognitively engage with one thought or another is limited by the range and complexity of information or 'facts. The

spoken word citations, notations made periodically by one man or another, the list acknowledging the sources of the information in the program notes, seemed appropriate. Yet at the same time were a bit of a burden to the audience, who somehow had to listen to (or ignore), filter, comprehend (or remember!) the information. I preferred to watch things happening; tasks being performed; lighting states changing and so on, and then at some point, quite near the end, I began to notice that all the information was somehow being assembled within myself/body. It was during a sustained movement section, with an evocative if not somewhat overbearing sound composition that somehow worked into me so that I breathed more deeply, that this assembling seemed to occur. These few moments were intimate and very enjoyable and I found I was protective of the sensations and feelings within myself hoping for the piece to finish so that I could pay attention to what it was I had *discovered*.

Zarrilli is alert to the 'unusual and difficult demands' the work makes on audiences (2012, .139).[10] Yet it is within the required effort that the experiential dramaturgy of the work is realized. Spectator is affected by actor; 'the actor's embodied consciousness, awareness, and perception, deployed in enacting some of the specific tasks/actions'. The encounter of the spectator and audience offers a third space to examine the way in which the actor's labour might be understood in the twenty-first century.

Watching the same performance, Boyd (2012) writes: Zarrilli's 'approach leads to an energetic theatre' (np). In her reading of *Told by the Wind*, she observes

actors engaged in a subdued exteriorization of movements like walking, hobbling, running, sweeping, flying in such a way that their inner landscape, whatever it may have been or

which awaited the viewer to name, seemed to exceed the external movement. Such inner-directed practice enables the actor to transcend the usual inner-outer binary thinking of motivation and action in acting.

Zarilli attributes this to the training in the breath manipulation, manipulation of the tension in the body, varying movement velocity all of which cohere to generate a stage 'presence … that reduces dependence on verbal or kinetic modes of expression' (Zarrilli 2012, 47). Awareness of such technicalities is usually the preoccupation of the actor yet in this case, the audience becomes awareness of the details of their own perceptual experiences.

This example brings actor and spectator perception together and finalizes to some degree, the mapping of the multiple codified systems of acting training since Diderot. Shifting from notions of consistency in technique to ensure maximum spectator emotion, to consistency in technique as evidence of self-mastery, the materiality of the actor remains the subject of theories of actor technique. As Roach (1985) articulates, 'The actor is the source and focus of a process, an action that begins with his own body and quickly extends beyond it' (32). The actor gestures and the audience feels. If the gesture leads sensation and thus precedes physiological responsiveness, the actor must execute concise technique. Thus, self-mastery is the labour of the actor regardless of the approach and requires the actor to develop awareness(es) within multiple *cognitions.* The language of neuroscience enables greater nuance in explicating acting and acting technique. Science of the self at a neural level is exponentially growing and it is still not clear what implications will emerge for traditional actor training idioms as they relate to sensation, feeling, impulse and action, and as we come to understand the ways in which these nuances play out in the language of theatre practice. Yet, the premise of this new way of thinking about actor training does call into question

issues of representation and artistic intent, in so far as they hinge on portrayals of human emotion, and are structured to affect human emotion. A new set of metaphors is needed with which to speak about those taken-for-granted experiences (habits) that the trainee actor must now re-encounter, the atrophied muscles, the discarded or uninhabited physical schema that might now be called upon to embody a role. The alternate schema of cognitive and neuroscience offer possible frameworks within which to reflect on/think about phenomena (of acting). The implications for cultural and social differences in performance practices might be equally illustrated through concepts such as consciousness, mindfulness, energy and entanglement as they are through concepts such as attention, awareness and habitus. Perhaps it is that the deep association with emotive vectors and their manifestation in the actor's performance as representation is a specifically Western notion of acting.

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Footnotes

[1] For earlier references in which the technique of the actors is under examination, see Daniel Meyer- Dinkgrafe's (2005, Intellect) seminal work Theatre and Consciousness: Explanatory Scope and Future Potential (2006) in which he reports: "tThe extent of the actor's emotional involvement in the emotions of the character he is playing has gained a prominent position, even before Diderot (1713-1784) formulated his famous paradox of acting in 1773. The Spanish theorist Alonso Lopez Pinciano (fl. 1597-1627) argued that although the actor 'must transform himself into the character he is imitating so that it appears to everyone else as no imitation, (...) it seems more likely that the best actor would concentrate on technique and move to tears without weeping himself' . (Carlson, 1984:59-61). Jusepe Antonio Gonzalez de Salas, in a text published in 1663, on the other hand, held that the actor 'must truly experience the passions of the play as interior feeling rather than guileful appearance' (Carlson, 1984: 65-66) … This dichotomy of technique versus emotional involvement is taken up by the subsequent major theorists of the theatre up to Diderot: Luigi Riccoboni (1676-1753, involvement); Antonio Francesco Riccoboni (1707-72, technique); St. Albine (1699-1778, involvement) (Carlson, 1984: 159)." (full citation from Meyer-Dinkgrafe 2005: 55).

[2] Translated as *duplication. Dedoublement* is a term that the French also used to signify a split or dual personality.

[3] Konstantin Stanislavsky, *My Life in Art*. (New York: Theatre Arts Books, 1957, translated by J. J. Robbins).

[4] Notwithstanding the influence of Stanislavsky's methods in the US, and their application through the training systems of Adler, Meisner, Strasberg and other advocates of the 'Stanislavsky Method' (or method acting), there were other practitioners directly

influenced by him, such as Meyerhold, who rejected the use of affective memory and such attempts at empathy, but embraced later ideas, such as the somatic work. This is also true of Polish director Jerzy Grotowski who was trained in Stanislavsky's techniques in the 1950s, and founded the Polish Laboratory Theatre on very different aesthetic premises, whilst retaining some of Stanislavsky's basic principles. Impulse, in particular, is at the core of his work (and attempts to remove the gap between inner impulse and outer action).

[5] These methods are then assessed in a scientifically controlled way in which evidence for their effectiveness is built and critiqued. Alba Emoting has since been commercialized – packaged and licensed, with accredited practitioners delivering the training in a pseudo medical model /allied health model approach.

[6] It is easy to get excited about new ways of talking about familiar ideas and practices. Blair and Lutterbie (2011:68) state that 'different kinds of evidence ranging from the neural to the linguistic and behavioural, are useful for different aspects of performance studies. We are all to aware of our 'stranger' position within the cognitive sciences and wish to alert readers to the necessity of taking a cautionary approach that gives due weight to the difference between speculation and claim making (evidence) in science. In Blair and Lutterbie's words, we are using science as a 'springboard' to engage with the topic.

[7] *Told by the Wind*, collaboration between Zarrilli, playwright and dramaturg Kaite O'Rielly and performer Jo Shapland. Premièred at Chapter Arts Centre (Cardiff) 29 January 2010.

[8] A collaboration by Phillip Zarrilli, with Kaite O'Reilly (The Llanarth Group), Peader Kirk (MKultra London/Athens), and Ian Morgan (Song of the Goat, Poland); performed by Zarrilli, and Morgan that premiered in Chapter Arts, Cardiff on 27 January, 2012. I watched the show on 4 February 2012

[9] Lighting by Ace McCarron elevates the work conceptually with space, objects and bodies ameliorated by a stunning design.

[10] Unique to Zarrilli's collaborations is the integration of his psychophysical training practice as 'central throughout the process, providing the basis for each performer's generation and deployment of an energetic awareness applied to each task and structure as it develop[s]'. For more detail of the process and performance score and structure of Told by the Wind, see Zarilli, 2012.

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